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National Oceanic and Atmospheric Administration
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Refer to:

2002/00879

October 18, 2002

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Re: Endangered Species Act Section 7 Formal Programmatic Consultation and Magnuson-Stevens Act Essential Fish Habitat Consultation on Bureau of Land Management, Forest Service, and BIA/Coquille Indian Tribe Actions Affecting Southern Oregon/Northern California Coho Salmon, Oregon Coast Coho Salmon, and Oregon Coast Steelhead.

Dear Agency Administrators:

This responds to your May 15, 2002, letter requesting reinitiation of consultation under the Endangered Species Act on actions proposed within Southwest Oregon Province lands administered by Umpqua, Siskiyou, Rogue River, and Siuslaw National Forests (FS); Medford, Coos Bay, Roseburg, and Eugene Bureau of Land Management Districts (BLM); and the BIA/Coquille Indian Tribe (CIT) as well as Federal actions occurring on adjacent non-federal lands. In the reinitiation letter you requested removal of three categories of activities contained within the National Marine Fisheries Service's (NOAA Fisheries) Programmatic Biological



Opinion (OSB2001-0070-PC-AM) issued August 8, 2001. These categories of activities include Federal actions with associated interrelated or interdependent activities involving private lands.

The April 13, 2001, biological assessment (BA) addressed programmatic activity categories that “may affect, are not likely to adversely affect” (NLAA) or that “may affect, are likely to adversely affect” (LAA) Southern Oregon/Northern California (SONC) coho salmon (*Oncorhynchus kisutch*) and Oregon Coast (OC) coho salmon, and conferencing for OC steelhead (*O. mykiss*). Informal consultation with the National Marine Fisheries Service (NOAA Fisheries) for five NLAA programmatic activity categories was completed on July 2, 2001. In a letter dated June 29, 2001, the action agencies requested that the “instream mining” category be withdrawn from this consultation. With this most recent request to remove three additional categories of actions, NOAA Fisheries now concludes consultation and conferencing on the remaining nine LAA programmatic activity categories within this revised biological opinion (Opinion). This letter also provides our essential fish habitat (EFH) comments pursuant to the Magnuson-Stevens Fishery Conservation Act (Magnuson-Stevens Act). The ESA and EFH discussions in this letter are based on our review of the BA provided by the FS, BLM, and CIT (the April 13, 2001 ESA consultation initiation letter with attachments).

If you have any questions regarding this Opinion, please contact Ken Phippen of my staff in the Oregon Habitat Branch at 541.957.3385.

Sincerely,


F.1

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Endangered Species Act - Section 7
Consultation
and
Magnuson-Stevens Act
Essential Fish Habitat Consultation

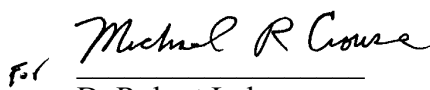
PROGRAMMATIC
BIOLOGICAL AND CONFERENCE
OPINION

Bureau of Land Management, Forest Service, and BIA/Coquille Indian Tribe Programmatic
Activities Affecting SONC Coho Salmon, OC Coho Salmon, and OC Steelhead

Action Agencies: Umpqua, Siskiyou, Rogue River, and Siuslaw National Forests; Medford,
Coos Bay, Roseburg, and Eugene Bureau of Land Management Districts;
and the BIA/Coquille Indian Tribe

Consultation
Conducted By: NOAA Fisheries
Northwest Region

Date Issued: October 18, 20002

Issued By: 
D. Robert Lohn
Regional Administrator

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1. ENDANGERED SPECIES ACT

1.1 Background

On May 23, 2002, NOAA Fisheries received a request from the Umpqua, Siskiyou, Rogue River, and Siuslaw National Forests (FS); Medford, Coos Bay, Roseburg, and Eugene Bureau of Land Management (BLM) Districts; and the BIA/Coquille Indian Tribe (CIT), requesting reinitiation of consultation pursuant to section 7 of the Endangered Species Act (ESA) for nine categories of programmatic activities. In the reinitiation letter, the agencies requested removal of three categories of actions addressed in the Programmatic Biological Opinion (OSB2001-0070-PC-AM), issued August 8, 2001.¹ These categories of activities include Federal actions with associated interrelated or interdependent activities on private lands. Informal consultation with the National Marine Fisheries Service (NOAA Fisheries) for five NLAA programmatic activity categories was completed on July 2, 2001 (OSB2001-0070-IEC).²

Consistent with this new request to remove these three additional categories of activities, NOAA Fisheries now concludes consultation and conferencing on the remaining nine LAA programmatic activity categories with this revised biological opinion (Opinion). The April 13, 2001, BA addressed programmatic activity categories that “may affect, are likely to adversely affect” (LAA) Southern Oregon/Northern California (SONC) coho salmon (*Oncorhynchus kisutch*) and Oregon Coast (OC) coho salmon. The BLM/FS/CIT also requested conferencing for OC steelhead (*O. mykiss*), a candidate species. Species considered in this biological opinion (Opinion) are: SONC coho salmon, OC coho salmon, and OC steelhead.

In Oregon coastal streams south of Cape Blanco, the NOAA Fisheries listed SONC coho salmon as threatened under the ESA on May 6, 1997 (62 FR 24588), and designated critical habitat for this species on May 5, 1999 (64 FR 24049). Protective regulations for SONC coho salmon were issued under section 4(d) of the ESA on July 18, 1997 (62 FR 38479). In Oregon coastal streams north of Cape Blanco, NOAA Fisheries listed OC coho salmon under the ESA as threatened on August 10, 1998 (63 FR 42587). Protective regulations for OC coho salmon were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). OC steelhead were proposed as threatened under the ESA on August 9, 1996 (61 FR 41541), but found not warranted for listing on March 19, 1998 (63 FR 13347). OC steelhead are currently a candidate species.

Because of the candidate status of OC steelhead, NOAA Fisheries has considered the BLM/FS/CIT’s effects determinations for this species simultaneously with SONC and OC coho salmon in this consultation. NOAA Fisheries applies a habitat-based jeopardy analysis and land

¹The three deleted categories were: Tailhold anchors, guyline trees, cable lays, and yarding corridors; discretionary use permits; and discretionary right-of-ways, easements, and grants.

²The five NLAA categories were: Special forest products and ornamental rock collecting; repair of storm-damaged roads; tree prism salvage and tree clearing; miscellaneous special use permits and leases; and renewal of right-of-way for water withdrawals and related facilities.

management actions are assumed to have similar effects upon SONC coho salmon, OC coho salmon and OC steelhead because similar aquatic habitat conditions are necessary for survival and recovery of these species. The Southwest Oregon Programmatic Level I Team also found effects at the watershed scale for all proposed actions to be the same for SONC coho salmon, OC coho salmon, and OC steelhead. For the nine programmatic activity categories covered in this consultation, NOAA Fisheries expects that this Opinion will be the basis of a biological opinion for OC steelhead if there is a future listing under the ESA for this evolutionarily significant unit (ESU). Likewise, NOAA Fisheries expects that this Opinion will be the basis for critical habitat determinations if critical habitat is either designated or proposed for OC steelhead or OC coho salmon.

The Level I team, comprised of fish biologists from administrative units within the SONC coho salmon, OC coho salmon, and OC steelhead ESUs, and NOAA Fisheries, prepared the BA used in this evaluation. The Level I team prepared the BA following the February 26, 1997 (revised June 1999) streamlining consultation guidelines and supporting documentation provided with the BA. The Level I team also used procedures established in NOAA Fisheries *Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale* (NMFS 1996) to determine the effects of the proposed actions relative to the environmental baseline at the project³ (or site) and watershed⁴ scales, using criteria based on listed and candidate salmonid biological requirements.

The objective of this Opinion is to determine whether the nine proposed Federal programmatic activities occurring within the Southwest Oregon Province are likely to jeopardize the continued existence of SONC coho salmon and OC coho salmon or destroy or adversely modify designated critical habitat for SONC coho salmon.

1.2 Proposed Action

The BA describes the programmatic Federal actions and their potential effects on SONC coho salmon, OC coho salmon, and OC steelhead. Programmatic activity categories addressed in the BA were determined to be either NLAA or LAA for the species listed above. The nine categories of programmatic activities determined to be LAA are the subject of this Opinion and are listed in Table 1. The NLAA actions were addressed in a separate informal consultation (July 2, 2001).

³Project sites are areas of variable size, but typically range from tens to hundreds of acres, and are where specific management activities take place (FEMAT, 1993, p. V-59).

⁴A watershed is the drainage basin contributing water, organic material, dissolved nutrients, and sediments to a stream or lake. For the purposes of this consultation, watershed will refer to the “fifth field” hydrologic unit code (HUC) watersheds which have been cooperatively delineated by the USFS and BLM. Watersheds are made up of smaller drainage basins known as subwatersheds. Watersheds (and some large subwatersheds or aggregates of watersheds) are the proper size for conducting Watershed Analysis and assessing many key processes and features affecting ecosystem function.

The BLM/FS/CIT developed watershed activity tables for each 5th field watershed within the action area (BA, Appendix VIII, pp. 260-286). The tables forecast the number of activities within each programmatic category that would occur over the next five years within each watershed. The forecasted numbers are projected estimates based on how much activity occurred over the previous five years (1995-2000).

Table 1. Proposed Actions that are Likely to Adversely Affect (LAA) SONC coho salmon, OC coho salmon, or OC steelhead.

Programmatic Activity
Road Maintenance
Aquatic and Riparian Projects
Recreation Site, Trail, and Administrative Structure Maintenance and Associated Public Use
Fisheries, Wildlife, Botany, and Cultural Programs
Non-Commercial Vegetation Treatments
Pump Chance/Helipond Maintenance and Use
Rock Quarry Operations/Ornamental Rock Collecting
Road Decommissioning, Obliteration, Storm Proofing, and Inactivation
Telephone Line and Power Line Renewal Special-Use Permits/Right-of-Way Grants

The following are descriptions of each programmatic activity category. In addition to the action descriptions, the Level I team developed project design criteria (PDCs) (reiterated in terms and conditions below) for each programmatic action to further minimize effects to listed and candidate species.

1.2.1 Road Maintenance

Road maintenance is used to maintain safety, control/prevent road erosion and sedimentation and maintain or restore hydrologic function. It typically includes using heavy equipment for surface maintenance (grading, leveling), drainage maintenance, installation, replacement, or repair (ditch-lines, water dips, cross-drain culverts, and water bars), vegetation management (brushing, limbing, seeding, mowing, and mulching), road cut and fill repair/stabilization, surface repair/replacement (paving, repaving, chip-sealing and rocking), small slide removal (*i.e.*, routinely, quickly, and easily handled with typical maintenance equipment), snow-plowing, dust abatement, and maintenance and repair of structures (guardrails, signs, relief and stream crossing culverts, bridges).

This category also includes immediate stabilization of storm-damaged roads to prevent or minimize adverse hydrologic effects or transmission of sediment into streams and other water

bodies. This category is not applicable for deferred major storm damage repairs or major storm damage repairs computed solely to maintain vehicle traffic.

1.2.2 Aquatic and Riparian Habitat Projects

Aquatic habitat projects are generally completed to restore habitat conditions for fish species. Restoration projects are generally done within the stream channel or adjacent floodplain to improve spawning, rearing or migration habitats. Project maintenance is also a significant component of each project.

This category includes the placement of large wood (whole trees or portions of trees), boulders, and gravel into the channel, construction and maintenance of riparian fences, excavation of side channels and alcoves, riparian silvicultural activities, and stream bank and channel stabilization. Project access roads typically are rehabilitated with various techniques, including seeding, waterbars, ripping and blocking. Passage improvements include: (1) The replacement of barrier culverts with passable culverts, pipe-arches or bridges; (2) construction, maintenance, and cleaning of fish ladders; and (3) placement/construction of sills (boulder, wood, concrete) to improve access to culverts. Work may be accomplished using manual labor, heavy equipment or helicopters and may involve the use of heavy equipment in the stream channel.

1.2.3 Recreation Site, Trail, and Administrative Structure Maintenance and Associated Public Use

This category includes providing access to and use of public recreational activities (campgrounds, picnic areas, trails, boat ramps, *etc.*), including safety and property damage reduction. This category also includes tree hazard management along Federal roads used for recreation.

Program activities consist of tree hazard management (at developed and dispersed recreation facilities, along roads and trails, at rights-of-way, and for adjacent non-federal land), facility maintenance, repair, and upgrade, trail maintenance, repair, and upgrade (including that of stream crossings; typically using hand tools, hand power tools, small motorized equipment), brushing, tread work, and removal of downed trees from a trail.

1.2.4 Fisheries, Wildlife, Botany, and Cultural Programs

This category includes assessing and monitoring aquatic and riparian habitat conditions; assessing and monitoring individual and communities of vertebrate, invertebrate and botanical species; assessing cultural and historic resources; and educating the public about aquatic and riparian resources/values.

Program activities consist of: (1) Aquatic habitat inventories, (2) spawning surveys, (3) fish presence surveys, (4) snorkeling surveys, (5) aquatic macroinvertebrate collecting, (5) riparian vegetation surveys, (6) wildlife surveys, (7) water quality monitoring, (8) cultural resource

assessments (including excavating test pits <1m² in size), and (9) supervised school and public education (including Salmon Watch) activities.

1.2.5 Non-Commercial Vegetation Treatments

This category includes the use of manual or light powered equipment (*i.e.*, does not include the use of bulldozers, excavators, *etc.*), to aid silviculture through the reduction of competition/predation and collection of plant material to prevent and control the spread of nonnative vegetation, and to enhance habitat for native vegetation and/or wildlife.

Program activities consist of: (1) Preparing planting sites (typically using chainsaws, machetes and other similar hand or power tools); (2) controlling brush and pruning using hand and power tools; (3) precommercial thinning of young trees, (typically 2-4 inches diameter breast height (dbh)); (4) controlling animal damage by trapping, tubing, rodent baiting, or other manual method; (5) planting trees and other desired vegetation; (6) collecting cones, seedlings, *etc.*; (7) mulching; (8) meadow mowing and tree topping, girdling, *etc.* to enhance wildlife habitats; and (9) prescription burning outside riparian reserves.

1.2.6 Pump Chance/Helipond Maintenance and Use

This category includes maintenance and use of pump chances and heliponds to support fire suppression and dust abatement activities. Access routes to pump chances are maintained by removing vegetation from trails to pumper trucks and/or helicopter access points, removing trees from helicopter loading sites, and the installation of boulders (or similar) to increase pool depth. Also included is dredging of heliponds to improve water storage capacity, and installation of drain pipes, riprap and liners in ponds. Withdrawals from streams and ponds may be used for many activities (*e.g.*, fire control, dust abatement, compacting roads). Water for fire control is typically not withdrawn every year. Water withdrawals will not occur in low flow streams that cannot sustain them.

1.2.7 Rock Quarry Operations/Ornamental Rock Collecting

This category includes the use of rock and gravel for road construction and maintenance activities, and for other activities such as restoration projects. The category also includes the sale and collection of cobbles, boulders, *etc.* for ornamental use, and activities within existing quarry boundaries, including restoration, rehabilitation, drilling, blasting, crushing, sorting, loading, hauling on new or existing roads, and stockpiling material from decommissioned roads. The category also includes the collection of ornamental rock from within riparian reserves.

1.2.8 Road Decommissioning, Obliteration, Storm Proofing, and Inactivation

This category includes the removal or stabilization of unnecessary, unstable, or poorly designed/constructed/located roads or portions of roads. Actions include bridge and culvert removal, removal of asphalt and gravel, subsoiling or ripping of road surfaces, out sloping, water

barring, fill removal, sidecast pullback, revegetation with native species and placement of large woody material (LWM) and/or boulders, and roadway barricading to exclude vehicular traffic.

1.2.9 Telephone Line and Power Line Renewal Special-Use Permits and Right-of-Way Grants

This category includes vegetation, road, and pole maintenance associated with the renewal of telephone line and non-federal Energy Regulatory Commission-related powerline special-use permits. Permitted road maintenance only applies to nonsystem spur roads needed to access lines. Vegetative maintenance activities consist of brushing understory vegetation, tree limbing, chipping slash, and falling of hazard trees underneath or along telephone line and powerline corridors. Road maintenance consists of actions that are similar to those described under that programmatic category. Pole maintenance includes repair and replacement of damaged and downed poles and lines. Equipment (backhoes and trucks) are needed to carry, straighten and dig footings for poles. This activity does not include use of herbicides. The Federal analysis of effects will include direct and indirect effects, together with the effects of interrelated and interdependent activities, which Federal actions enable to occur on non-federal lands.

1.3 Biological Information and Critical Habitat

The action area is defined by NOAA Fisheries regulations (50 CFR 402.02) as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action." The action area includes all Federal lands administered by the Federal agencies, and non-federal lands affected by the proposed programmatic actions, in basins within the Southwest Oregon Province. Essential habitat features for salmonids include: Substrate, water quality, water quantity, water temperature, water velocity, cover/shelter, food (juvenile only), riparian vegetation, space, and safe passage conditions (50 CFR 226).

References for further background on listing status, biological information, and critical habitat elements can be found in Table 2.

Table 2. References for Additional Background Information on Listing Status, Critical Habitat, Protective Regulations, and Biological Information for the Listed and Candidate Species Considered in this Opinion.

Species	Listing Status	Critical Habitat	Protective Regulations	Biological Information, Population Trends
Southern Oregon/Northern California coho salmon	May 6, 1997, 62 FR 24588 Threatened	May 5, 1999, 64 FR 24049	July 18, 1997, 62 FR 38479	Weitkamp <i>et al.</i> 1995; NMFS 1997a; Sandercock 1991; Nickelson <i>et al.</i> 1992
Oregon Coast coho salmon	August 10, 1998, 63 FR 42587 Threatened		July 10, 2000, 65 FR 42422	Weitkamp. <i>et al.</i> 1995; Nickelson <i>et al.</i> 1992; NMFS 1997b; Sandercock 1991
Oregon Coast steelhead	March 19, 1998, 63 FR 13347 Not Warranted			Busby <i>et al.</i> 1996.

1.4 Evaluating Proposed Actions

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NOAA Fisheries must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the initial steps of defining the biological requirements and current status of the listed species, and evaluating the relevance of the environmental baseline to the species' current status.

Subsequently, NOAA Fisheries evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NOAA Fisheries must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing actions; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NOAA Fisheries finds that the action is likely to jeopardize, NOAA Fisheries must identify reasonable and prudent alternatives for the action.

Furthermore, NOAA Fisheries evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. NOAA Fisheries must determine whether habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. NOAA Fisheries identifies those effects of the action that impair the function of any essential element of critical habitat. NOAA Fisheries then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NOAA Fisheries concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the proposed action, NOAA Fisheries' jeopardy analysis considers direct or indirect mortality of SONC coho salmon, OC coho salmon, or OC steelhead attributable to the action. NOAA Fisheries' critical habitat analysis considers the extent to which the proposed action impairs the function of essential elements necessary for juvenile and adult migration, spawning, and rearing of SONC coho salmon under the existing environmental baseline.

1.4.1 Biological Requirements

The first step in the methods the NOAA Fisheries uses for applying the ESA section 7(a)(2) to listed salmon is to define the species' biological requirements that are most relevant to each consultation. NOAA Fisheries also considers the current status of the listed species taking into account population size, trends, distribution, and genetic diversity. To assess the current status of the listed species, NOAA Fisheries starts with the determinations made in its decision to list the species for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for salmonids to survive and recover to naturally-reproducing population levels, at which time protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment. For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning, and rearing.

The action area is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR § 402.02). For the purposes of this consultation, the action area includes 83 watersheds (BA pp. 222-233) in the Umpqua, Siskiyou, Rogue River, and Siuslaw National Forests, the Medford, Coos Bay, Roseburg, and Eugene BLM Districts, and the CIT administered lands, as well as any non-federal lands and river reaches downstream of the administrative unit boundaries that may be affected by Federal land management activities. The programmatic actions covered in this Opinion occur in 12 fourth-field basins: Mainstem Umpqua, North Umpqua, South Umpqua, Applegate, Illinois, Lower Rogue, Middle Rogue, Upper Rogue, Chetco, Sixes, Coos, and Coquille, all within the SONC coho salmon, OC coho salmon or OC steelhead ESUs.

1.4.2 Environmental Baseline

The *Matrix of Pathways and Indicators* (MPI) and the *Checklist for Documenting Environmental Baseline and Effects of the Proposed Action(s) on Relevant Indicators* (Checklist) are used to characterize the environmental baseline in terms of current functional conditions of instream, riparian, and watershed elements that reflect local geologic and climatic conditions in the action area. The Level I team used the applicable Physiographic MPI (either the Klamath Mountains Province, Tye Sandstone, or Western Cascades) and Checklist to characterize the environmental baseline for each of the 83 fifth-field watersheds.

The Level I team described the environmental baseline for each fifth-field watershed included in this consultation. However, due to the number of fifth-field watersheds included in this consultation (82), only the seventeen selected for intensive analysis (see Analysis of Effects) have been displayed in Table 3. The remainder of the fifth-field environmental baseline descriptions can be found in the BA (pp. 222-233).

Table 3. Summary of Habitat Indicator Environmental Baseline Conditions for Seventeen Watersheds Within the Action Area: Elk River (Elk), North Fork Coquille River (NFC), South Fork Coos River, (SFCoos), Upper Smith River (USR), Lower Smith River (LSR), Rogue-BLM Wild Sec (RWS), Little Applegate River (LAR), Silver Creek (SC), East Fork Illinois River (EFI), Evans Creek (EC), Lower Cow Creek (LCC), Grave Creek (GC), Middle Applegate (MA), Boulder Creek (BC), Big Butte Creek (BB), Jackson Creek (JC), and Little River (LR).

Habitat Indicator	Properly Functioning	At Risk	Not Properly Functioning
Water Quality			
Temperature	LR, RWS, SC	JC	BC, BB, ER, SFCoos, NFC, USR, LSR, LAR, MA, GC, EC, LCC, EFI
Sediment/Turbidity	BC, USR	ER	BB, JC, LR, SFCoos, NFC, LSR
Chemical Concentrations/ Nutrients	BC, ER, RWS, SC, EC, LCC, EFI	BB, JC, LR, SFCoos, NFC, LSR, LAR, MA	GC
Access			
Physical Barriers	BC, LR, RWS, SC, EFI	BB, JC, ER, GC, LCC	SFCoos, NFC, USR, LSR, LAR, MA, EC
Habitat Elements			
Substrate/Sediment	BC, SC	ER, SFCoos, NFC, RWS, LAR, MA, LCC, EFI	JC, LR, USR, LSR, GC, EC
Large Woody Debris	RWS	BC, BB, ER, SC, EFI	JC, LR, SFCoos, NFC, USR, LSR, LAR, MA, GC, EC, LCC
Pool Area %	LSR	ER, NFC, USR	SFCoos
Pool Character and Quality	BC, RWS	BB, ER, NFC, USR, LSR, SC, EFI	JC, LR, SFCoos, LAR, MA, GC, EC, LCC
Habitat Indicator	Properly Functioning	At Risk	Not Properly Functioning
Off-Channel Habitat/ Refugia	BC, ER, RWS, SC	BB, LSR, EFI	JC, LR, SFCoos, NFC, USR, LAR, MA, GC, EC, LCC
Channel Condition and Dynamics			

Width/Depth Ratio	BC, BB, LR, ER, USR, RWS, SC	LAR, GC, EC, LCC, EFI	JC, SFCoos, NFC, LSR, MA
Streambank Condition	BC, USR, RWS, EC	BB, JC, LR, ER, SFCoos, NFC, SC, LAR, GC, LCC, EFI	LSR, MA
Floodplain Connectivity	BC, RWS, SC	BB, JC, LR, ER, SFCoos, USR, LAR, LCC, EFI	NFC, LSR, GC, EC, MA
Flow/Hydrology			
Changes in Peak/Base Flows	BC, RWS, SC	BB, LAR, LCC, EFI	JC, LR, MA, GC, EC
Increase in Drainage Network	BC	BB	JC, LR
Watershed Conditions			
Road Density and Location	BC	BB, ER, LSR, SC, LAR, EFI	JC, LR, SFCoos, NFC, USR, RWS, MA, GC, EC, LCC
Disturbance History	BC	ER, SFCoos, RWS, SC, LAR, LCC, EFI	USR, LSR, MA, GC, EC
Riparian Reserves	BC, RWS	ER, SC, LAR, MA, LCC, EFI	BB, JC, LR, SFCoos, NFC, USR, LSR, GC, EC
Landslide Rates	BC	BB, ER, RWS, SC, LAR, EFI	JC, LR, SFCoos, NFC, LSR, MA, GC, EC

NOAA Fisheries described the current population status of SONC coho salmon in a status review (Weitkamp *et al.* 1995; NMFS 1997a; Sandercock 1991; Nickelson *et al.* 1992), and in the final listing rule (June 18, 1997, 62 FR 33038). Critical habitat for this ESU was designated on May 5, 1999 (64 FR 24049). Interim protective regulations for SONC coho salmon were issued under section 4(d) of the ESA on July 18, 1997 (62 FR 38479). NOAA Fisheries described the current population status of OC coho salmon (Weitkamp *et al.* 1995; NMFS 1997b; Sandercock 1991; Nickelson *et al.* 1992) in a status review and in the final listing rule (August 10, 1998, 63 FR 42587). Critical habitat for this ESU was designated on February 16, 2000 (65 FR 7764). Protective regulations for OC coho salmon were issued under section 4(d) of the ESA on July 10, 2000 (65 FR 42422). NOAA Fisheries described the current population status of OC steelhead (Busby *et al.* 1996) in a status review and in the final rule (March 19, 1998, 63 FR 13347) in which NOAA Fisheries determined that the status of the ESU did not currently warrant listing. OC steelhead is currently a candidate species.

As noted above, the action area includes all areas directly or indirectly affected by the proposed action. The general action area for this Opinion can be defined as all 83 watersheds in which the proposed actions would occur. SONC coho salmon, OC coho salmon, and OC steelhead use the action areas as habitat for rearing, feeding, spawning, incubation habitat, and migration. The

environmental baseline of the action areas is dominated by conditions rated as functioning at risk or not properly functioning (see Table 3, and watershed MPIs in BA). These conditions are likely, in part, the result of past land management activities.

Based on the best information available on the current status of SONC coho salmon, OC coho salmon, and OC steelhead, and NOAA Fisheries' assumptions based on the information available regarding population status, population trends, and the poor environmental baseline conditions within the action area, NOAA Fisheries finds that the environmental baseline does not currently meet all of the biological requirements for the identified ESUs. Actions that promote attainment of properly functioning aquatic conditions, when added to the environmental baseline, are necessary to meet the needs of the species (survival and recovery for listed fish).

1.5 Analysis of Effects

1.5.1 Effects of Proposed Action

The BA and supporting information document compliance for each of the programmatic activity categories with the following critical components of the NFP: (1) Standards and guidelines, (2) watershed analysis, (3) land allocations, and (4) ACS objectives. The Level I team reviewed the categories of programmatic actions and determined they were consistent with ACS objectives (BA, pp. 164-212). Additionally, the team found that the proposed actions are consistent with reasonable and prudent measures and terms and conditions outlined in the March 18, 1997 biological opinion for Land and Resource Management Plans for several National Forests and Resource Management Plans for several BLM Districts (LRMP/RMP Opinion, 1997). The team also developed additional project design criteria (PDC) to further minimize the likelihood of impacts to SONC coho salmon, OC coho salmon, and OC steelhead. In the BA, the BLM/FS/CIT described the typical range of effects ("Effects Common to the Activity Categories"; pp. 29-72) of each activity category when PDCs described in the BA are followed. The Level 1 team concluded that the effects analysis describes most effects that can be anticipated from the programmatic actions and that these effects would not differ between watersheds across the Southwest Oregon province. However, the Level 1 team also concluded that some effects may not have been considered in the program-level effect analyses due to unique watershed conditions or from potential cumulative effects within each watershed.

To address this potential concern, watersheds from the three major physiographic provinces (Tyee Sandstone, Klamath Mountains, Western Cascades) within Southwest Oregon, where activities occurred, were selected for further analysis. It was determined that a 20% sample of watersheds in each physiographic province would likely represent the range of baselines and activities across each province. Seventeen watersheds were selected between the three provinces using the following criteria: (1) Condition category (properly functioning, at risk, and not properly functioning); (2) the proportion of Federal lands in each watershed, high numbers of programmatic activities; and (3) adequate baseline information. Of these 17 selected watersheds, three are properly functioning, five are functioning at risk, and nine are not properly functioning. The Level 1 team considers the 17 watersheds as representative of those not described in detail

because they represent a range of baseline conditions and have high levels of activity. If effects outside the range of those described occur, they would be addressed by site specific BMPs developed by each administrative unit, which would be in addition to the programmatic PDCs described in the BA.

The anticipated effects of the proposed activities were reviewed by each administrative unit in relation to the environmental baseline, unique watershed conditions, and their spatial and temporal distribution. All of the anticipated effects were found to fall within the range of effects described in the effects analysis portion of the BA. The proposed actions individually and cumulatively, were found to cause effects that were too small in scale, duration, and intensity to cause a "shift" (*i.e.*, from properly functioning to functioning at risk) in any matrix indicators at the fifth field scale.

Site specific analysis indicated that any adverse impacts from the proposed programmatic actions are expected to be of limited extent and duration. NOAA Fisheries finds that temporary adverse effects to listed and candidate salmonids and their habitat may occur from the proposed programmatic actions. The spatial and temporal extent of potential adverse effects which may lead to incidental take is described in the BA. However, these adverse impacts will not retard nor prevent attainment of properly functioning habitat indicators important to SONC coho salmon, OC coho salmon, or OC steelhead at the project scale. The following is a summary of potential effects that could occur from the proposed programmatic activities.

1.5.1.1 Road Maintenance

Riparian vegetation can be disturbed when culverts are upgraded or when roads are brushed. Generally, brushing is limited to within four feet of the road ditchline and outside shoulder. Brushing along roads that parallel the stream channel for several miles could have localized effects on water temperatures during summer months when water temperatures would be prone to increases from a reduction of shade. When culverts are upgraded or additional ones installed, riparian shrubs and trees may be cut and excavated to access each site. This type of activity may have no or very localized effects on water temperature because of the small amount of vegetation being removed.

Road maintenance generally helps to limit sediment input and turbidity from road systems over time. However, the maintenance activities themselves can contribute some sediment to streams. Fine sediment can be generated from surface and drainage maintenance, culvert replacement and repair, culvert cleaning, stabilization of storm-damaged roads, road repairs and stabilization, and small slide removal. The proposed PDCs will limit the amount of fine sediment entering stream channels. However, where sediment does enter the stream, effects on fish could include reduced respiration efficiency due to gill irritation and reduced feeding efficiency due to poor visibility. However, these effects would be short-term, and should not result in serious injury or death.

Some sediment may enter stream channels because of heavy equipment use and disturbance of soils. The amount of sediment that enters a stream is expected to be small, infrequent, and of

short duration. Short-term effects such as localized increases in fine sediment in gravels or along channel margins may occur. However, substrate quality would not be expected to decrease over time.

Contamination to the stream channel from the proposed activities could occur from equipment leaks (*e.g.*, diesel fuel, oil, hydraulic fluids, and antifreezes) or refueling during project implementation. However, following the proposed PDC of refueling at least 150 feet from a stream and having spill containment equipment on hand should reduce the risk of these hazards. Contamination may also occur from wet concrete or wastewater when bridges or culverts are repaired. Spilled wet concrete can cause rapid pH swings, which has the potential to cause stress to fish. However, most routine maintenance does not involve concrete, and spills are infrequent. Overall risk to water quality should be negligible.

Asphalt used during resurfacing can leach out hydrocarbons, which can influence pH. Because routine maintenance generally consists of patching small road segments, during dry conditions hydrocarbon leaching should not be a concern to water quality. Extensive patching during wet periods may pose a greater risk, and could be outside the typical range of effects in this programmatic. Dust abatement materials can also pose a risk to water quality if not properly applied. The most common dust abatement materials are calcium chloride, magnesium chloride, and ligninsulfonates. Usually, applying calcium chloride or magnesium chloride does not injure fish or degrade water quality beyond background levels of calcium or magnesium. Even where dust abatement materials wash into ditchlines and streams, effects to water quality would typically not last more than a few hours. Proposed PDCs will substantially reduce contamination risks. Martin (1989) found that the influences from using dust abatement compounds could be reduced by restricting their use within 25 feet of a water body and in areas of shallow ground water.

1.5.1.2 Aquatic and Riparian Habitat Projects

Sediment delivery to the stream channel could occur from the construction of restoration access roads, channel excavation, some types of structure placement, culvert replacement, and hauling materials to the site over native surface roads. However, the proposed PDCs are expected to limit sediment sources and design failures. Stream sedimentation can also occur for several years after the project is completed until a stream channel adjusts to its original form and vegetation has been established. Sediment from project failures may lead to increased bank erosion or formation of new channels.

Chemical contamination of the stream channel could occur from equipment leaks (diesel fuel, oil, hydraulic fluids, and antifreezes) or refueling during project implementation. However, the proposed PDCs should significantly reduce these hazards.

Artificial streambank stabilization may be a component of some projects. Treatments that harden stream banks and leave them in an unnatural condition can cause channel erosion downstream and deter natural channel processes. Instream structures can cause stream bank

erosion by creating velocity vortices at high flows. The proposed PDCs should ensure these effects are minimized.

Riparian vegetation can be disturbed when culverts are replaced, banks are undercut by channel adjustments, spur roads are constructed, trees are thinned to improve stand conditions, trees are knocked over or cut to provide instream structures, or trees are removed when side channels are excavated. Effects should be localized and should not affect overall riparian vegetation or stand conditions in a way that would affect salmonids.

The correction of some culvert barriers could allow introduced species greater access to tributary habitats. This can increase competition, hybridization, and the displacement of native salmonids by nonnative or hatchery fish. Projects with these potential effects should be analyzed further, and may be outside the proposed programmatic activities considered in this consultation.

1.5.1.3 Recreation Site, Trail, and Administrative Structure Maintenance and Associated Public Use

Clearing brush and felling hazard trees within the riparian reserve could increase solar radiation to streams. However, the proposed PDCs require that brushing not occur within ten feet of intermittent and 20 feet of perennial streams. This is expected to protect overhanging vegetation that is currently providing shade close to the stream. However, taller alders or hazard trees providing shade outside this buffer could be cut as needed. Information for trail and recreation site maintenance shows that only a few hazard trees are cut per year at any one site or trail. Thus, effects to water temperature should be minimal, since removal of hazard trees would be localized and not affect enough trees to reduce stream shade.

Aquatic habitats could potentially be affected from trail maintenance through sediment delivery associated with small slide removal and tread repair. Tread maintenance may have localized short-term sediment effects when rocks or roots are removed. Slide maintenance may also contribute sediment when material is removed and the trail tread is graded through damaged sections. The proposed PDCs are expected to minimize potential sediment impacts. Grading and resurfacing of graveled roads in campgrounds may produce sediment. However, it is unlikely that sediment would affect aquatic habitats since riparian buffers would filter most sediment before reaching a stream, grading is generally conducted during dry conditions, and graded material would be kept out of drainage ditches where it can be transported to streams.

Contamination from spills may occur during routine trail and recreation maintenance. Spills may include fuel, oil, cleaning materials, or human waste associated with equipment and the pumping of toilets. The proposed PDCs are expected to minimize spills and their effects.

Trail and recreation site maintenance can affect instream wood by creating smaller, more mobile pieces when blowdown trees and hazard trees are cut to allow passage along streamside trails. The proposed PDCs are expected to lessen these effects to streams.

1.5.1.4 Fisheries, Wildlife, Botany, and Cultural Programs

Activities associated with some types of surveys and monitoring can disturb or stress adult/juvenile fish or crush eggs/fry buried in the gravel. The proposed PDCs (redd identification, proper training, and coordination) should reduce these risks. Disturbing or spooking adult fish while spawning can result in reduced reproductive success through either prevention of redd (nest) establishment, displacement of adults to less suitable habitats, creation of poorly constructed redds or excess energy expenditure resulting in premature death of spawning adults (Dufour, 1995). Although such surveys and monitoring may cause harm to individual fish, it is unlikely they would adversely affect entire fish populations at any scale.

1.5.1.5 Non-Commercial Vegetation Treatments

Pre-Commercial Thinning.

Precommercial thinning (PCT) in the riparian reserve has the potential to increase solar radiation to streams and the forest floor, thereby changing microclimates and water temperature (Beschta, *et al.*, 1987). However, the proposed PDCs require that an untreated or modified treatment area within the riparian reserve be maintained to prevent any potential adverse effects to stream channels or water quality conditions. PCT would also have negligible effects on sediment because very little ground disturbance takes place when smaller trees are cut.

PCT in the riparian reserve would have minimal effect on the amount of woody debris in streams. The proposed PDC is designed to provide an untreated area that will maintain enough recruitment to sustain channel and habitat features.

PCT in transient snow zones could affect peak/base flows depending on the amount of bare ground exposed that could result in increased water yield. In stands greater than 15 years old the potential risk of rain-on-snow events is increased. Thinning these areas could drop the canopy recovery, potentially increasing the risk of peak flows until the stands recover. However, in the long term, thinning early seral stands allows trees to develop the stand structure and canopy necessary to lessen rain-on-snow events and to break up wind more efficiently than younger, overstocked stands with small diameter trees. Treating stands greater than 30 years of age poses the greatest risk of generating higher peakflows. These stands are close to recovery (75 to 100% canopy closure) and are partially functioning to reduce rain-on-snow events and breaking up wind patterns. However, these units would not be treated frequently or at a large enough scale to affect aquatic habitats.

Noxious Weeds.

Noxious weeds are often treated using a combination of control methods which include mechanical control such as hand-pulling and clipping, and biological control through parasites and pathogens. The use of herbicides is not covered under this programmatic BA.

Mechanical treatments could result in localized soil disturbance as plants are pulled. Increased sediment to streams along road cuts and fills and within riparian areas is possible, but the

increase would likely be undetectable, since only a limited amount of vegetation would be removed in a treated area. Not all sediment from pulling weeds along roads would reach a stream because relief culverts intercept ditch flow and drain it onto the forest floor away from streams, and because hand pulling is very labor-intensive and costly, so only a few acres per year within any watershed could be treated using this technique.

Prescribed Fire.

Since the proposed PDCs do not allow intentional prescribed burning within riparian reserves, any effects to aquatic resources would likely result from handlines, lost upland vegetation and/or hydrophobic soils. Handlines can create erosion from the excavation. However, handlines are not constructed on every burn. They are generally needed only when weather or burn conditions dictate the protection of a particular resource, like riparian reserves. When needed, handlines are generally not constructed in a riparian reserve, but parallel to them. This technique protects stream bank vegetation and leaves a vegetative buffer in place, which minimizes erosion. If handlines are constructed on steeper ground, lines would be water barred to reduce erosion.

Exposed soil can be present following a prescribed burn, and would be prone to erosion until rains stimulate the regrowth of grass and other vegetation. Conducting burns during wetter conditions will reduce the risk of producing hydrophobic soils because the intensity of the burn should be less. Given the small acres that could be burned each year, and the intact riparian buffers, it is unlikely that enough sediment or nutrients would be generated to affect aquatic resources at the subwatershed scale.

Most effects from small burns would be limited to the site scale from the loss of individual understory and overstory trees. In a transient snow zone, fires that result in stands with less canopy closure and greater openings will accumulate more snow and be more prone to rapid snow melt. This is primarily due to reduced surface area and interception loss by the canopy.

Although the proposed PDCs are designed to protect riparian reserves, fire can escape control lines and burn riparian vegetation. A fire burned under the right conditions with good control measures will likely see only minor fire encroachment in riparian reserves. In contrast, fires that escape control lines may burn through smaller reserves consuming some ground fuels and riparian trees. However, due to the small scale of most escaped fires, it is unlikely that impacts to riparian reserves would cause any adverse impacts to listed fishes or their habitat.

1.5.1.6 Pump Chance/Helipond Maintenance and Use

Streamside trees and shrubs may be brushed or cut to provide better access to water drafting sites and for hazard tree removal at those sites. Removal of riparian vegetation would be minimal in streams along roadside pullouts used for water drafting, but may be more extensive along valley bottom spur roads. Effects to water temperature would be negligible because of the localized removal of vegetation that shades the stream.

The greatest potential for increasing turbidity from the activities is from the deepening of pump chances. Sites that require extensive excavation with abundant fine sediment could create turbidity plumes hundreds of feet downstream, while in other situations turbidity plumes may only occur within a few feet of the site. The proposed PDC's require that sediment control be used if conditions warrant their use. Activity will also be limited to the low flow period. Therefore, turbidity increases are likely to be short-term, lasting no more than a few minutes to hours.

The use of heavy equipment in streams or along stream banks, and refueling of pumps can present a hazard if fuel or oil leaks into streams. However, the proposed PDC of refueling at least 150 feet from a stream, and having spill equipment on hand should reduce these hazards.

In smaller streams that lack deeper habitats, small dams may be built to pond water to facilitate pumping directly into a truck or a temporary basin along a road. Use of temporary dams is infrequent, however, because they are time consuming to construct and do not always provide enough flow to meet demands. Dams can be in place for several hours or days depending on the water needed. The construction of dams that block fish passage is not covered under this consultation.

Effects to woody debris recruitment would occur when hazard trees are cut along spur roads and when in-channel debris is moved to excavate a pool. Overall effects to wood should be minimal because few hazard trees are cut at each site, sites comprise a small portion of the overall riparian area, and cut trees will be left on the site.

Pools constructed in-channel can also be altered from these activities when they are excavated or when the volume of water decreases when they are pumped. Pool excavation generally occurs in small perennial streams, but can sometimes occur in larger fish-bearing streams, which may create problems if fish are present. Generally, sites are not excavated more than once or twice every five years, but some sites in heavy bedload streams could be excavated yearly.

Streamside vegetation would be brushed to maintain access to fire sumps. Most of this work would include brushing previously cleared areas with few, if any, larger trees removed. Riparian vegetation cleared would include willows, alders, big leaf and vine maple and, around ponds, cattails. Clearing of any riparian vegetation may prevent establishment of a full complement of riparian cover within riparian zones.

1.5.1.7 Rock Quarry Operations/Ornamental Rock Collection

Rock quarry activities can generate sediment when pits are excavated, and the material is crushed, piled, and hauled. Quarries that are in riparian reserves have a greater chance of transporting sediment through over steepened fills, compacted surfaces and excavated slopes. Quarries outside riparian reserves may transport sediment via roads, but only if the quarry road ditchline connects to a stream. The PDCs for quarry operations are designed to minimize sediment transport during both dry and wet seasons. Turbidity from rock quarries during spring

snowmelt should last a few hours to days depending on use. Turbidity resulting from storm events would likely not be discernible from other sediment sources. Turbidity created from ornamental rock collection should be minimal. Most ornamental rocks are collected from either existing quarries, rock outcrops in the forest, or in streams. The amount of rock collected in outcrops or streams is generally only a few cubic yards per permit. The proposed PDCs do not allow rock collection in wetted channels. Thus, there should be no direct sediment production within streams.

Chemical contamination could occur from equipment leaks or refueling. Since most use is expected to occur in the dry season to meet the proposed PDCs, if spills did occur, contamination would be confined to the soil surrounding the spill.

Rock quarries generally have compacted soils and are more prone to overland flow during intense rain/snow melt events. Peak flows could be increased by accelerated runoff from quarries if the overland flow reached a ditchline, moves through any vegetated buffer, or contributes to increased groundwater recharge.

Riparian vegetation can be affected by sidecasting crushed rock, removal of hazard trees, rock excavation, and vehicle use within the quarry. Most quarries in headwater sites are away from riparian habitats. However, a few quarries can have small intermittent channels running near or through the site. Continued use of these quarries prevents the establishment or recovery of riparian vegetation along these channels.

1.5.1.8 Road Decommissioning, Obliteration, Storm Proofing, and Inactivation

Riparian vegetation can be disturbed when culverts are upgraded or removed, over-steepened fills are pulled back, and when roads are inactivated or permanently removed. When culverts are upgraded or removed, riparian shrubs and trees may be cut and excavated to access each site and restore proper channel dimensions. This type of activity may have no or very localized effects on water temperature because of the small amount of vegetation being removed, if any.

If properly designed and maintained, road treatments can decrease sediment loading to streams and can, over time, improve habitat conditions. However, before such improvements can be realized, short-term sediment and turbidity increases may be realized from the proposed activities, depending on the size of the action. Sedimentation can also occur for several years after the project is completed until a stream channel or hillslope adjusts to its original form and vegetation has been established. Sediment from design failures could also occur, especially in steep unstable terrain or in climates that can produce rapid surface and subsurface flows (*e.g.*, rain-on-snow elevations). The proposed PDCs will help to limit sediment affects. Depending on how much sediment reaches a stream, short-term effects to fish could include increased gill irritation resulting in reduced respiration efficiency and reduced feeding efficacy due to poor visibility. However, effects should not reach a level where they are prolonged, and would result

in substantial changes in substrate composition or decreased embryo/alevins survival within a redd. These effects would be outside the proposed programmatic actions for this consultation.

Chemical contamination could occur from equipment leaks (diesel fuel, oil, hydraulic fluids, and antifreezes) or refueling during project implementation. However, the proposed PDC of refueling at least 150 feet from a stream and having spill equipment on hand should reduce these hazards. Contamination may also occur from wet concrete, concrete dust or wastewater when bridges are removed. The proposed PDC of preparing wet concrete at least 150 feet from a stream should reduce some of these hazards.

Sedimentation can occur during project implementation, post project recovery, and from design failures, but should not cause long-term negative impacts to channel substrates. Short-term effects such as localized increases in fine sediment in gravels or along channel margins may be seen for several months or years after project completion. However, substrate quality should not decrease over time.

Activities that occur near streams can disturb or stress adult and juvenile fish. Culvert upgrades, removals, and valley bottom road removals may take several hours or days to complete. Fish should move into habitat above or below the site to avoid equipment in or near the channel and then quickly recolonize the vacated habitat as flows are reestablished within the completed channel.

1.5.1.9 Telephone Line and Power Line Renewal Special-Use Permits/Rights-of-Way Grants

Power and telephone lines require vegetation to be cleared from the center of the line to a set distance (usually 10 to 50 feet on either side of the line). Telephone lines and smaller spur powerlines along roads may require vegetation removal only along one side of the line. Vegetation is cleared on a set rotation that is usually once every five to ten years. Vegetation can be controlled by removing limbs, hazard trees, and brush. The clearing of brush and trees in riparian reserves may increase solar radiation to streams and the forest floor. The proposed PDCs require that brushing not occur within ten feet of intermittent or ephemeral streams and 20 feet of perennial streams. This PDC will protect overhanging vegetation that is currently providing shade close to the stream. However, trees providing shade within and outside this buffer would be limbed or topped as needed.

The repair and maintenance of underground cables may require excavation. Soil disturbance could result from excavating the ditch to maintain the line. Most maintenance would be completed in the summer, and appropriate BMPs would be used. Therefore, excavation of a line in a road's fill slope would likely have only localized sediment increases to streams that would not substantially increase turbidity. Excavation in a ditchline that crosses several streams, may result in increased sedimentation and turbidity. Excavated trenches are usually small (approximately 6 to 8 inches wide and 10-30 feet deep), resulting in localized bank erosion. Excavation is not required over large streams because cables are attached to bridges, buried in

the roadbed, or bored under the stream. Storms may move disturbed soils if the site has not had sufficient recovery time or been properly vegetated. Turbidity increases could last a few hours to days depending on the soil disturbance at the site.

The use of heavy equipment and chainsaws near streams can present a hazard from leaks and spills. However, the proposed PDC of refueling at least 150 feet from a stream and having spill equipment on hand should reduce these hazards.

1.5.2 Effects on Critical Habitat

NOAA Fisheries designates critical habitats based on physical and biological features that are essential to the listed species. Essential features for designated critical habitats include: Substrate, water quality, water quantity, water temperature, food, riparian vegetation, access, water velocity, space and safe passage. Critical habitat for SONC salmon consists of all waterways below naturally-impassable barriers, including the project area. The adjacent riparian zone is also included in the designation. This zone is defined as the area that provides the following functions: Shade, sediment, nutrient or chemical regulation, streambank stability, input of large woody debris or organic matter, and others. Effects to critical habitats from these categories are included in the description of effects expressed above.

In summary, the proposed actions have the potential to affect critical habitat. Over the short term, temporary disturbances to the aquatic and riparian habitat may occur from the proposed activities. Over the long term, the proposed actions are expected to maintain or improve existing environmental baseline conditions. Consequently, NOAA Fisheries does not expect that the net effect of these actions will diminish the long-term value of habitat for survival of SONC coho salmon. This analysis also considers the actions' effect on habitat occupied by OC coho salmon and OC steelhead. In the event critical habitat is designated for these species, this analysis could be the basis for an assessment when consultation is reinitiated.

1.5.3 Cumulative Effects

Cumulative effects are defined in 50 CFR 402.02 as "those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation."

Non-federal activities within the action area are expected to increase with a projected 34% increase in human population over the next 25 years in Oregon (Oregon Department of Administrative Services 1999). Thus, NOAA Fisheries assumes that future private and state actions will continue to occur at similar levels within the action area and will increase gradually over time as population density increases.

1.6 Conclusion

Based on the information and analysis described in this Opinion, the NOAA Fisheries has determined that implementation of the nine categories of programmatic actions is not likely to jeopardize the continued existence of SONC coho salmon, OC coho salmon, or OC steelhead. The determination was based on the following:

1. The proposed programmatic actions will not prevent, or appreciably delay, recovery of properly functioning habitat conditions.
2. Each proposed action has specific project design criteria, that were developed during a lengthy cooperative process with NOAA Fisheries, that modify the actions to minimize the likelihood of adverse effects on aquatic and riparian habitat conditions.

In reaching this conclusion, NOAA Fisheries has used the best scientific and commercial data available, as documented, and the BA and its supporting documentation, incorporated by reference. NOAA Fisheries also considered the status of listed and candidate salmon and steelhead, environmental baseline conditions, the direct and indirect effects of the actions, and the cumulative effects of actions anticipated in the action area. NOAA Fisheries evaluated the proposed actions and found that they could cause short-term, adverse effects to some environmental baseline indicators for listed and candidate salmon and steelhead, under certain watershed conditions. However, the proposed actions would not create significant effects at the watershed scale, and are not expected to result in further degradation of prespawning survival, egg-to-smolt survival, or upstream/downstream migration survival rates to a level that would appreciably diminish the likelihood of survival and recovery of candidate or listed fishes, nor would likely result in destruction or adverse modification of critical habitat.

1.7 Reinitiation of Consultation

Consultation must be reinitiated after five years. It must also be reinitiated if: The amount or extent of taking specified in the Incidental Take Statement is exceeded, or is expected to be exceeded; new information reveals effects of the action may affect listed species in a way not previously considered; the action is modified in a way that causes an effect on listed species that was not previously considered; or, a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). To reinitiate consultation, the BLM/FS/CIT should contact the Habitat Conservation Division (Oregon Office) of NOAA Fisheries.

2. INCIDENTAL TAKE STATEMENT

Section 9 and rules promulgated under section 4(d) of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. “Harm” is further defined to include significant habitat modification or degradation that results in death or injury to listed species by

significantly impairing behavioral patterns such as breeding, feeding, and sheltering. “Harass” is defined as actions that create the likelihood of injuring listed species by annoying it to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. “Incidental take” is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement.

An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. It also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

2.1 Amount or Extent of the Take

NOAA Fisheries anticipates that certain actions covered by this Opinion are reasonably certain to cause incidental take of SONC coho salmon or OC coho salmon. Effects of actions such as these are largely unquantifiable and are not expected to be measurable as long-term effects on population levels. Therefore, even though NOAA Fisheries expects some low level of incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NOAA Fisheries to estimate a specific amount of incidental take to the species itself. In instances such as these, the NOAA Fisheries designates the expected level of take as “unquantifiable”. Based on the information in the BA, NOAA Fisheries anticipates that an unquantifiable amount of incidental take could occur as a result of actions covered by this Opinion. The extent of the take is limited to the action area.

2.2 Reasonable and Prudent Measures

NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize take of SONC coho salmon and OC coho salmon resulting from the programmatic actions. NOAA Fisheries believes that the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of listed fish resulting from implementation of this Opinion. These reasonable and prudent measures would also minimize adverse effects to designated critical habitat.

1. Minimize the likelihood of incidental take from road maintenance activities by applying PDC’s described in the BA to avoid or minimize disturbance to riparian and aquatic systems.
2. Minimize the likelihood of incidental take from aquatic and riparian habitat projects by applying the results of watershed analysis, and by applying PDC’s described in the BA to avoid or minimize disturbance to riparian and aquatic systems.

3. Minimize the likelihood of incidental take from recreation site, trail, and administrative structure maintenance and associated public use activities by applying PDC's described in the BA to avoid or minimize disturbance to riparian and aquatic systems.
4. Minimize the likelihood of incidental take from fisheries, wildlife, botany, and cultural program activities by applying PDC's described in the BA to minimize disturbance to listed or candidate fish.
5. Minimize the likelihood of incidental take from non-commercial vegetation treatments by applying PDC's described in the BA to minimize disturbance to aquatic and riparian habitats.
6. Minimize the likelihood of incidental take from pump chance and helipond maintenance and use by applying PDC's described in the BA to minimize disturbance to aquatic and riparian habitat.
7. Minimize the likelihood of incidental take from rock quarry operations and ornamental rock collecting by applying PDC's described in the BA to minimize disturbance to aquatic and riparian habitat, and by avoiding activities during winter months with the potential to generate and deliver sediment to streams.
8. Minimize the likelihood of incidental take from road decommissioning, obliteration, storm proofing, and inactivation by applying PDC's described in the BA to minimize disturbance to aquatic and riparian habitat.
9. Minimize the likelihood of incidental take from telephone line and power line renewal special-use permits and right-of-way grants by applying PDC's described in the BA to minimize disturbance to aquatic and riparian habitat.
10. Minimize the likelihood of incidental take from construction activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage.
11. Complete an annual report (monitoring and reporting requirements reiterated in terms and conditions below) each year, for five years, to ensure that conservation measures from this programmatic Opinion are being implemented and are effective in minimizing the likelihood of take from proposed activities and provide to the Oregon Branch of the NOAA Fisheries.

2.3 Terms and Conditions

In order to be exempt from the prohibitions of section 9 of the ESA, the BLM/FS/CIT must comply with the following terms and conditions, which implement the reasonable and prudent measures (RPM) described above. Implementation of the terms and conditions within this

Opinion will further reduce the risk of impacts to listed fish and critical habitat. These terms and conditions are non-discretionary.

1. To implement Reasonable and Prudent Measure #1 (road maintenance activities), the BLM/FS/CIT shall:
 - a. Dispose of slide and waste material in stable, non-floodplain sites approved by a geotechnical engineer or other qualified personnel. Use stable sites beyond the floodplain within riparian reserves only if an interdisciplinary process has identified the area as stable and not susceptible to delivery to the adjacent stream. Provide erosion control at disposal sites to minimize sediment delivery to streams.
 - b. Minimize disturbance of existing vegetation in ditches and at stream crossings to the greatest extent possible.
 - c. Minimize soil disturbance and displacement, but where sediment risks warrant, prevent off-site soil movement through use of filter materials (such as straw bales or silt fencing) if vegetation strips are not available (see terms and conditions for RPM #10).
 - d. Implement LAA soil-disturbing maintenance activities during dry conditions to the greatest extent practical and follow Oregon Department of Fish and Wildlife (ODFW) In-Water Work Timing guidelines⁵, where relevant, except when the potential for greater damage to water quality and fish habitat exists if emergency road maintenance is not immediately performed.
 - e. Replacement culvert design and installation will meet NFP and ODFW standards.⁶
 - f. Refuel power equipment, or use absorbent pads for immobile equipment, and prepare concrete at least 150 feet (or as far as possible from the water body where local site conditions do not allow a 150-foot setback) from water bodies to prevent direct delivery of contaminants into associated water bodies.
 - g. Avoid application of dust abatement materials (for example, lignon or Mag-Chloride) within 25 feet of a water body or stream channel during or just before wet weather, and at stream crossings or other locations that could result in direct delivery to adjacent water bodies. Procurement of water used in dust abatement activities from pump chances will follow the PDCs of the Pump Chance Use programmatic category.
 - h. Control dispersed use activities affecting riparian vegetation or instream habitats which may lead to incidental take of listed species.
 - i. Implement road rehabilitation objectives to reduce incidental take and create localized road access closures where needed.

⁵ ODFW, Guidelines for Timing of In-water Work to Protect Fish and Wildlife Resources, 12 pp. (June 2000).

⁶ ODFW, Appendix A, Oregon Road/Stream Crossing Restoration Guide: Spring 1999.

- j. Ensure that all large wood is retained in the stream channel during culvert cleaning activities.
 - k. All activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage, must also meet all applicable terms and conditions to implement RPM #10 (construction).
2. To implement Reasonable and Prudent Measure #2 (aquatic and riparian habitat projects), the BLM/FS/CIT shall:
- a. Ensure that all instream projects involve a professional fisheries biologist.
 - b. Follow ODFW guidelines for timing of in-water work, where relevant, except where the potential for greater damage to fish, water quality and fish habitat exists.
 - c. Stabilize potential erosion areas and control sedimentation (see terms and conditions for RPM #10).
 - d. All disturbed areas shall be rehabilitated and stabilized by seeding and planting with native seed mixes or plants.
 - e. Minimize the number and length of access points through riparian areas.
 - f. Heavy equipment will be cleaned and will be free of leaks before used within the stream channel.
 - g. Time in which heavy equipment is in the stream channel will be minimized.
 - h. Equipment will not be stored in stream channels when not in use to avoid effects of vandals, accidents, or natural disasters.
 - i. Develop and implement an approved spill containment plan that includes having a spill containment kit on-site and at previously identified containment locations. Refuel equipment, including chainsaws and other hand power tools, at least 150 feet from water bodies to prevent direct delivery of contaminants into a water body (or as far as possible from the water body where local site conditions do not allow a 150-foot setback).
 - j. Use whole trees or tree pieces that are 1.5 to 2.0 times the active channel width with attached root-wads (if available). Use cable in project design sparingly and only when conditions do not exist to anchor large wood naturally between riparian trees or where stream power is great enough that wood meeting size criteria cannot be stabilized through natural anchoring. Favor use of bioengineering techniques.
 - k. No conifers will be felled in the riparian area for restoration purposes unless conifers are fully stocked or if necessary (*i.e.*, no other practical alternative) for safety. If necessary for safety, trees will be felled toward stream and left in place, or placed within the stream channel or floodplain at the site.
 - l. Permanent stream crossings. Permanent stream crossings will be built as follows.
 - i. Design.

- (1) Crossing types.⁷ Design road crossings in the following priority.
 - (a) Nothing – road realignment to avoid crossing the stream.
 - (b) Bridge – spanning the stream to allow for long-term dynamic channel stability.
 - (c) Streambed simulation – bottomless arch, embedded culvert, or ford.
 - (d) No-slope design culvert⁸ – sometimes referred to as hydraulic design, here limited to 0% slopes.
- (2) If the crossing will occur near an active spawning area, only full span bridges or streambed simulation may be used.
- (3) Fill width must be limited to the minimum necessary to complete the crossing, and must not reduce existing stream width.
- ii. New culverts.
 - (1) To provide for upstream passage of juvenile salmonids, the maximum average water velocity⁹ shall not exceed 1 foot per second.
 - (2) Suitable grade controls must be included to prevent culvert failure caused by changes in stream elevation.
- iii. Culvert maintenance. Culverts must be cleaned by working from the top of the bank, unless culvert access using work area isolation would result in less habitat take, to remove only the minimum amount of wood, sediment and other natural debris necessary to maintain culvert function without disturbing spawning gravel.
 - (1) All large wood recovered during cleaning must be placed downstream.
 - (2) All routine work must be done in the dry, using work area isolation if necessary.
- m. When replacing culverts, follow NFP and ODFW guidelines for design and installation, and minimize sedimentation potential by implementing appropriate measures, as per Oregon Department of Environmental Quality (ODEQ) turbidity standards.
- n. All activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect

⁷ For a discussion of crossing design types, see, National Marine Fisheries Service, Southwest Region, *Guidelines for Salmonid Passage at Stream Crossings* (September 2001) (<http://swr.nmfs.noaa.gov/hcd/NMFSSCG.PDF>) and Washington Department of Fish and Wildlife, *Fish Passage Design at Road Culverts: A Design Manual for Fish Passage at Road Crossings* (March 3, 1999) (<http://www.wa.gov/wdfw/hab/engineer/cm/toc.htm>).

⁸ "No-slope design culvert" means a culvert that is sufficiently large and installed flat to allow the natural movement of bedload to form a stable bed inside the culvert.

⁹ "Maximum average water velocity" means the average of water velocity within the barrel of the culvert calculated using the 10 percent annual exceedance of the daily average flow.

fish passage, must also meet all applicable terms and conditions to implement RPM #10 (construction).

3. To implement Reasonable and Prudent Measure #3 (recreation site, trail, and administrative structure maintenance and associated public use), the BLM/FS/CIT shall:
 - a. Follow ODFW Guidelines for Timing of In-Water Work, where relevant, except here the potential for greater damage to fish, water quality and fish habitat exists.
 - b. Minimize adverse effects of brushing (loss of shade, bank stability, *etc.*) when trails or facilities occur within riparian reserves by leaving as much uncut buffer as possible; *i.e.*, at least a 10-foot buffer along intermittent and ephemeral streams, and a 20-foot buffer along perennial streams.
 - c. Consider relocating mobile infrastructure away from potential hazard trees. Where relocation is not feasible, consider limbing or topping to alleviate the potential hazard. Where falling is deemed necessary directionally fall trees toward stream channels and riparian reserves and leave the tree on site, where it is safe and feasible to do so.
 - d. Do not remove down wood from sites within 1- site potential tree height (SPTH) of a stream channel except to clear trails, unless fisheries personnel determine that large woody material (LWM) objectives for stream and riparian reserves in the proposed project area are met as defined by Watershed Analysis (WA) and/or Northwest Forest Plan Record of Decision (ROD) Standards and Guidelines (S&Gs). Take steps to prevent firewood gathering and theft within riparian reserves.
 - e. For downed logs within the trail tread, retain the maximum feasible length. This could include using non-traditional methods or relocating trails.
 - f. Prevent and minimize erosion from trails by designing and maintaining proper drainage structures with adequate spacing of waterbars, especially before stream crossings.
 - g. Dispose of small (less than 3 cubic meters) slide and slump materials in stable areas and away from stream channels.
 - h. Refuel power equipment at least 150 feet from water bodies to prevent direct delivery of contaminants into a water body (or as far as possible from the water body where local site conditions do not allow a 150-foot setback).
 - i. Fisheries, hydrology or other qualified personnel shall review proposed activities to evaluate whether actions fall within the scope of programmatic consultation.
 - j. Control developed site use activities affecting riparian vegetation or instream habitat which may lead to incidental take of listed species, including localized access closures where needed.
 - k. All activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage, must also meet all applicable terms and conditions to implement RPM #10 (construction).

4. To implement Reasonable and Prudent Measure #4 (fisheries, wildlife, botany and cultural program activities), the BLM/FS/CIT shall:
 - a. Minimize amount of disturbance to fish by training personnel in survey methods that prevent or minimize disturbance of fish. Contract specifications will include these measures, where appropriate.
 - b. Avoid walking on fish redds, and where possible avoid sampling during spawning periods.
 - c. Coordinate with other local agencies to prevent redundant surveys.
 - d. Locate excavated material from cultural resource test pits away from stream channels. Replace all material back into test pits when survey is completed, and stabilize the surface.
 - e. Use multiple stream sites for informational field trips to minimize effects on any given stream or riparian area.

5. To implement Reasonable and Prudent Measure #5 (non-commercial vegetation treatments), the BLM/FS/CIT shall:
 - a. Maintain an untreated or modified treatment area within the riparian reserve to prevent any potential adverse effects to stream channel or water quality.
 - b. Fisheries, hydrology or other qualified personnel shall review proposed activities to define the affected areas.
 - c. During project design, develop appropriate measures to ensure protection of aquatic and riparian habitats.
 - d. Refuel power equipment, or use absorbent pads for immobile equipment, at least 150 feet distant from water bodies, to prevent direct delivery of contaminants into a water body (or as far as possible from the water body where local site conditions do not allow a 150-foot setback).

6. To implement Reasonable and Prudent Measure #6 (pump chance and heliport maintenance and use), the BLM/FS/CIT shall:
 - a. Dispose of slide and waste material in stable, non-floodplain sites approved by a geotechnical engineer or other qualified personnel. Use stable sites beyond floodplain within riparian reserves only if an interdisciplinary team has identified the area as stable and not susceptible to delivery of sediment to the adjacent stream. Provide erosion control at disposal sites to minimize sediment delivery to water bodies.
 - b. Minimize disturbance of existing riparian vegetation to the greatest extent practical; in particular, maintain shade, bank stability, and large woody material recruitment potential.

- c. Use sediment control measures such as straw bales, filter cloth, or sediment fences when conditions warrant their use (see terms and conditions for RPM #10).
 - d. Maximize maintenance activities during late summer and early fall to best avoid wet conditions.
 - e. Follow ODFW Guidelines for Timing of In-Water Work, where relevant, except where the potential for greater damage to fish, water quality and fish habitat exists.
 - f. Do not pump from streams that do not have continuous surface flow.
 - g. When pumping water in all situations from streams, ensure that at least one-half the original streamflow volume remains below the pump site.
 - h. Refuel power equipment, or use absorbent pads for immobile equipment, at least 150 feet distant from water bodies, to prevent direct delivery of contaminants into a water body (or as far as possible from the water body where local site conditions do not allow a 150-foot setback).
 - i. Fisheries, hydrology or other qualified personnel will work with engineering/fire personnel to review proposed activities to minimize potential effects to fish, stream channel conditions and water quality.
 - j. The decommissioning of unnecessary stream pump chances will be encouraged, as will the switch toward the use of off-channel ponds.
 - k. All activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage, must also meet all applicable terms and conditions to implement RPM #10 (construction).
 - l. Any water withdrawal authorized under this Opinion must have a fish screen installed, operated and maintained in accordance to NOAA Fisheries' fish screen criteria.¹⁰
7. To implement Reasonable and Prudent Measure #7 (rock quarry operations and ornamental rock collecting), the BLM/FS/CIT shall:
- a. For quarries that occur within riparian reserves, allow activities with the potential to introduce sediment into streams to occur only during the dry season (usually May 15 to October 15). If unusual circumstances (*e.g.*, emergency road repair) require such activities to occur outside of the dry season, require all necessary BMPs and other mitigation measures to prevent sediment movement into streams, and if appropriate, initiate emergency consultation.
 - b. Emphasize avoiding activities during wet periods, whether in the dry or wet season, that have the potential to generate and deliver sediment to streams.

¹⁰ National Marine Fisheries Service, Juvenile Fish Screen Criteria (revised February 16, 1995) and *Addendum: Juvenile Fish Screen Criteria for Pump Intakes* (May 9, 1996)(guidelines and criteria for migrant fish passage facilities, and new pump intakes and existing inadequate pump intake screens) (<http://www.nwr.noaa.gov/1hydroweb/hydroweb/ferc.htm>).

- c. Minimize sediment delivery from road use and quarry operations sufficient to meet ODEQ water quality standards.
 - d. For ornamental rock collecting, fisheries, hydrology or other qualified personnel will review proposed activities within 1-SPTH of perennial streams and other water bodies to define the extent of the collection area and to minimize potential effects to fish, stream channel conditions, and water quality.
 - e. All activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage, must also meet all applicable terms and conditions to implement RPM #10 (construction).
8. To implement Reasonable and Prudent Measure #8 (road decommissioning, obliteration, storm proofing, and inactivation), the BLM/FS/CIT shall:
- a. A fisheries biologist and/or hydrologist will participate in the design and implementation of each LAA project.
 - b. Dispose of slide and waste material in stable, non-floodplain sites. Disposal of slide and waste material within existing road prism or adjacent hillslopes is acceptable to restore natural or near-natural contours, as approved by a geotechnical engineer or other qualified personnel.
 - c. Minimize disturbance of existing vegetation in ditches and at stream crossings to the extent necessary to restore the hydrologic function of the subject road.
 - d. Minimize soil disturbance and displacement, but where sediment risks warrant, prevent off-site soil movement through use of filter materials (such as straw bales or silt fencing) if vegetation strips are not available (see terms and conditions for RPM #10).
 - e. Maximize activities during late summer and early fall during dry conditions to best avoid wet conditions.
 - f. Follow ODFW Guidelines for Timing of In-Water Work, where relevant, except where the potential for greater damage to water quality and fish habitat exists.
 - g. Refuel power equipment, or use absorbent pads for immobile equipment, at least 150 feet distant from water bodies, to prevent direct delivery of contaminants into a water body (or as far as possible from the water body where local site conditions do not allow a 150-foot setback).
 - h. Develop and implement an approved spill containment plan that includes having a spill containment kit on-site and at previously identified containment locations (see terms and conditions for RPM #10).
 - i. All activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage, must also meet all applicable terms and conditions to implement RPM #10 (construction).
9. To implement Reasonable and Prudent Measure #9 (telephone line and power line renewal special-use permits and right-of-way grants), the BLM/FS/CIT shall:

- a. Apply applicable PDCs from the road maintenance programmatic category.
 - b. Streams will be protected to the greatest extent possible from uncured concrete, concrete dust and wash water. Concrete preparation will occur a minimum of 150-feet from all water bodies.
 - c. Minimize brushing in riparian habitats by leaving a 10-foot buffer along intermittent and ephemeral streams, and a 20-foot buffer along perennial streams.
 - d. Hazard trees will be directionally felled toward streams and riparian reserves where it is safe and feasible to do so.
 - e. Do not remove hazard or blowdown trees in riparian reserves. If blowdown trees in riparian reserves need to be cut, keep lengths as long as possible.
 - f. All activities involving temporary access roads, use of heavy equipment, earthwork, site restoration, or that may otherwise involve in-water work or affect fish passage, must also meet all applicable terms and conditions to implement RPM #10 (construction).
10. To implement Reasonable and Prudent Measure #10 (construction), the BLM/FS/CIT shall:
- a. Each project will be individually reviewed by the action agency to ensure that all reasonable alternatives to riprap have been considered and impacts to natural resources have been avoided, minimized and mitigated, (*e.g.* the order of priority for alternatives to riprap could be tree revetments, stream barbs/flow deflectors, toe-rock, and riprap with embedded vegetation) and that the following project design conditions are met.
 - i. Construction impacts will be confined to the minimum area necessary to complete the project.
 - ii. Any water intake structure authorized under this Opinion must have a fish screen installed, operated and maintained in accordance to NOAA Fisheries' fish screen criteria (NMFS, 1995). (<http://www.nwr.noaa.gov/1hydro/hydroweb/ferc.htm>)
 - iii. ESA-listed fish must be handled with extreme care and kept in water to the maximum extent possible during transfer procedures. The transfer of ESA-listed fish must be conducted using a net or other device that holds water during transfer, whenever necessary to prevent added stress of an out-of-water transfer.
 - iv. Seined or transferred listed fish must be released as near as possible to capture sites.
 - v. A description of any seine, transfer, or release effort will be included in annual report, including the name and address of the supervisory fish biologist, methods used to isolate the work area and/or minimize disturbance to ESA-listed species, the means of fish removal, the number of fish removed by species, the condition of all fish released, and any incidence of observed injury or mortality.

- b. Work that inhibits the passage of any adult or juvenile salmonid species throughout the construction period will be minimized.
- c. Pollution and erosion control measures will be developed for each authorized project to prevent point-source pollution related to construction operations. The measures will contain the pertinent elements listed below, and meet requirements of all applicable laws and regulations.
 - i. Methods will be used to prevent erosion and sedimentation associated with access roads, stream crossings, construction sites, borrow pit operations, haul roads, equipment and material storage sites, fueling operations and staging areas.
 - ii. A description of the hazardous materials (as defined by the state of Oregon) that will be used, including inventory, storage, handling, and monitoring.
 - iii. A spill containment and control plan with notification procedures, specific clean up and disposal instructions for different products, quick response containment and clean up measures that will be available on site, proposed methods for disposal of spilled materials, and employee training for spill containment.
- d. Temporary access roads are designed as follows:
 - i. Existing roadways or travel paths will be used whenever reasonable.
 - ii. The number of stream crossings is minimized.
- e. Effective erosion control measures shall be in-place at all times during the contract. Project activities within the project vicinity will not begin until all necessary temporary erosion controls (*e.g.*, sediment barriers) are in place.
 - a. During construction, all erosion controls must be inspected daily during periods of precipitation and weekly during the dry season to ensure they are working adequately.¹¹
 - b. If inspection shows that the erosion controls are ineffective, work crews must be mobilized immediately to make repairs, install replacements, or install additional controls as necessary.
 - c. Sediment must be removed from erosion controls once it has reached 1/3 of the exposed height of the control.
 - d. An oil-absorbing, floating boom shall be available on-site during all phases of construction whenever surface water is present.
- f. Site preparation will be completed in the following manner, including the removal of stream materials, topsoil, surface vegetation and major root systems:
 - i. Any instream large wood or riparian vegetation within 1-SPTH that is altered during construction be replaced with a functional equivalent.
 - ii. Whenever the project area is to be revegetated or restored, native channel material, topsoil and native vegetation removed for the project will be stockpiled for redistribution on the project area.

¹¹ "Working adequately" means no turbidity plumes are evident during any part of the year.

- g. Earthwork, including drilling, blasting, excavation, dredging, filling and compacting, will be completed in the following manner:
 - i. During excavation, native streambed materials saved for later use will be stockpiled in a location where the least amount of damage will occur to the stream bank or riparian vegetation, preferably above bankfull elevation.
 - ii. Material removed during excavation will only be placed in locations where it cannot enter streams or other water bodies.
 - iii. All exposed or disturbed areas will be stabilized to prevent erosion. Areas of bare soil within 150 feet of waterways, wetlands or other sensitive areas will be stabilized by native seeding, as quickly as reasonable after exposure, but within 7 days of exposure. Inspect and replace failed plantings (if less than 80%) within the first year following project completion.
 - iv. Project actions will follow all provisions of the Clean Water Act (40 CFR Subchapter D) and DEQ's provisions for maintenance of water quality standards. Toxic substances shall not be introduced above natural background levels in waters of the state in amounts which may be harmful to aquatic life, and any turbidity caused by this project shall not exceed DEQ water quality standards, as described in Oregon Administrative Rules (OARs) Division 41.
 - h. Site restoration and clean-up, including protection of bare earth by seeding, planting, mulching, is done in the following manner.
 - i. All damaged areas will be rehabilitated similar to or better than pre-work conditions including restoration of original streambank lines, and contours.
 - ii. No herbicide application will occur as part of the permitted action. Mechanical removal of undesired vegetation and root nodes is permitted.
11. To implement Reasonable and Prudent Measure #11 (annual monitoring and reporting requirements), the BLM/FS/CIT shall:
- a. Each year FS/BLM/CIT must send a report to NOAA Fisheries. The report will have two parts: (1) A report of the number of LAA projects in certain activity categories, and (2) a monitoring report of the results of semi-annual field reviews. The report will cover the fiscal year period (October 1 - September 30). The information will be due the following January. The purpose of the reporting is to validate the extent and amount of take and improve the conservation of aquatic systems. The Level 1 Team will meet at the end of January to discuss each year's information and assemble the report.
 - b. The information reported to NOAA Fisheries in each annual report is specified by programmatic category below:
 - i. Road Maintenance.

- (a) Estimate the total road mileage by ownership (Federal or non-federal).
 - (b) The total road mileage federally-maintained within a watershed. This will be displayed by showing the total proportion of federally-controlled roads within the watershed and total LAA road mileage that is maintained within each watershed.
 - (c) For dust abatement application provide the total road mileage within the watershed where LAA abatement materials (*e.g.* calcium chloride) are applied.
 - (d) The preferred format for display would be the reporting form.
- ii. Aquatic and Riparian Habitat Projects.
 - (a) Estimate the total LAA miles of stream treated.
 - (b) Estimate the total LAA acres of riparian reserves treated.
 - (c) Number of LAA fish passage culverts replaced to accommodate a 100-year flood event within watersheds.
 - (d) Number of LAA culverts replaced in nonfish-bearing streams to accommodate a 100-year flood event within watersheds.
- iii. Recreation Site, Trail, and Administrative Structure Maintenance and Associated Public Use.
 - (a) Estimate the total miles and/or acres of recreation/administration sites and trails maintained within 1-SPTH of a waterbody, by watershed.
 - (b) Report number of downed trees and hazard trees >16-inches dbh, which are felled or bucked within 1-SPTH. The preferred format for display would be the reporting form.
 - (c) Report the miles of trail maintained that are used by motorized vehicles within 1- SPTH, by watershed.
- iv. Fisheries, Wildlife, Botany, and Cultural Programs.
 - (a) Estimate the total LAA stream mileage surveyed and inventoried (categorized by method) within a watershed. The preferred format for display would be the reporting form.
- v. Non-Commercial Vegetation Treatments.
 - (a) Estimate total LAA PCT and prescribed burning acres within a watershed, total PCT acres with 1-SPTH by watershed, and describe (*i.e.*, width, treatment) the modified treatment/untreated buffer. The preferred format for display would be the reporting form.
- vi. Pump Chance/Helipond Maintenance and Use.
 - (a) Total the number and type (*e.g.*, pond or stream) of pump chances.
 - (b) State the number of LAA sites that were maintained or used, by watershed.
- vii. Rock Quarry Operations.

- (a) Estimate the total number of active LAA quarries within and outside riparian reserves and the number of LAA quarries with winter activities, by watershed.
 - (b) Within 3 years of conclusion of programmatic consultation, inspect active quarries and identify those that are LAA in their current condition. Where needed, develop plans for the neutralization of hydrologic, sediment, and contaminant hazards.
- viii. Road Decommissioning, Obliteration, Storm Proofing, and Inactivation.
 - (a) Estimate the total LAA road mileage decommissioned, obliterated, stormproofed, and/or inactivated by category within a watershed. This will be displayed by showing the total amount of federally-controlled roads within the watershed, the total LAA mileage decommissioned, *etc.*, within the watershed, and total road mileage within 1-SPTH in the watershed that has been decommissioned, *etc.* The preferred format for display would be the reporting form.
 - (b) Because of inconsistency in terminology, each action agency will provide a definition of each category used in the monitoring report.
- ix. Telephone Line and Power Line Renewal Special-Use Permits/Right-of-Way Grants.
 - (a) Report miles of LAA road maintained within 1-SPTH of a waterbody separated by Federal and non-federal ownership, by watershed.
 - (b) Report acres of LAA vegetation treated within 1-SPTH of a waterbody separate by Federal and non-federal ownership, by watershed.
 - (c) Report number of hazard trees cut within 1-SPTH of a waterbody, by watershed.
 - (d) The duration of this programmatic incidental take statement shall be 5 years. The action agencies will need to reinitiate consultation on the categories of actions authorized by this opinion within five years of the date of issuance. This term and condition is in addition to reinitiation requirements described in section 1.7 above.

3. MAGNUSON-STEVENSON ACT

3.1 Background

The objective of the essential fish habitat (EFH) consultation is to determine whether the proposed action may adversely affect designated EFH for relevant species, and to recommend conservation measures to avoid, minimize, or otherwise offset potential adverse effects to EFH resulting from the proposed action.

3.2 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (MSA), as amended by the Sustainable Fisheries Act of 1996 (Public Law 104-297), requires the inclusion of EFH descriptions in Federal fishery management plans. In addition, the MSA requires Federal agencies to consult with NOAA Fisheries on activities that may adversely affect EFH.

EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity (MSA §3). For the purpose of interpreting the definition of essential fish habitat: “Waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species' full life cycle (50CFR600.110).

Section 305(b) of the MSA (16 U.S.C. 1855(b)) requires that:

- Federal agencies must consult with NOAA Fisheries on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH;
- NOAA Fisheries shall provide conservation recommendations for any Federal or state activity that may adversely affect EFH;
- Federal agencies shall within 30 days after receiving conservation recommendations from NOAA Fisheries provide a detailed response in writing to NOAA Fisheries regarding the conservation recommendations. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on EFH. In the case of a response that is inconsistent with the conservation recommendations of NOAA Fisheries, the Federal agency shall explain its reasons for not following the recommendations.

The MSA requires consultation for all actions that may adversely affect EFH, and does not distinguish between actions within EFH and actions outside EFH. Any reasonable attempt to encourage the conservation of EFH must take into account actions that occur outside EFH, such as upstream and upslope activities, that may have an adverse effect on EFH. Therefore, EFH consultation with NOAA Fisheries is required by Federal agencies undertaking, permitting or funding activities that may adversely affect EFH, regardless of its location.

3.3 Identification of EFH

The Pacific Fisheries Management Council (PFMC) has designated EFH for federally-managed fisheries within the waters of Washington, Oregon, and California. The designated EFH for groundfish and coastal pelagic species encompasses all waters from the mean high water line, and upriver extent of saltwater intrusion in river mouths, along the coasts of Washington, Oregon

and California, seaward to the boundary of the U.S. exclusive economic zone (370.4 km)(PFMC 1998a, 1998b). Freshwater EFH for Pacific salmon includes all those streams, lakes, ponds, wetlands, and other water bodies currently, or historically accessible to salmon in Washington, Oregon, Idaho, and California, except areas upstream of certain impassable man-made barriers (as identified by the PFMC), and longstanding, naturally-impassable barriers (i.e., natural waterfalls in existence for several hundred years) (PFMC 1999). In estuarine and marine areas, designated salmon EFH extends from the nearshore and tidal submerged environments within state territorial waters out to the full extent of the exclusive economic zone (370.4 km) offshore of Washington, Oregon, and California, north of Point Conception to the Canadian border.

Detailed descriptions and identifications of EFH for the groundfish species are found in the *Final Environmental Assessment/Regulatory Impact Review for Amendment 11 to The Pacific Coast Groundfish Management Plan* (PFMC 1998a) and NOAA Fisheries' *Essential Fish Habitat for West Coast Groundfish Appendix* (Casillas *et al.* 1998). Detailed descriptions and identifications of EFH for the coastal pelagic species are found in Amendment 8 to the *Coastal Pelagic Species Fishery Management Plan* (PFMC 1998b). Detailed descriptions and identifications of EFH for salmon are found in Appendix A to Amendment 14 to the *Pacific Coast Salmon Plan* (PFMC 1999). Assessment of the potential adverse effects to these species' EFH from the proposed action is based on this information.

3.4 Proposed Actions

The proposed actions are detailed above in section 1.2. The action area includes all Federal lands administered by the Federal agencies, or non-federal lands affected by the proposed programmatic actions, in basins within the Southwest Oregon Province. This area has been designated as EFH for various life stages of salmon, groundfish and coastal pelagic species (Table 4).

3.5 Effects of Proposed Action

As described in detail in section 1.5, the proposed activities may result in detrimental short- and long-term adverse effects to a variety of habitat parameters. These impacts include disturbance of riparian vegetation, increased sedimentation of riparian and aquatic habitats, possible chemical contamination of water quality, and altered channel morphology.

3.6 Conclusion

NOAA Fisheries believes that the proposed action will adversely affect the EFH for the groundfish, coastal pelagic, and Pacific salmon species listed in Table 4.

3.7 EFH Conservation Recommendations

Pursuant to Section 305(b)(4)(A) of the Magnuson-Stevens Act, NOAA Fisheries is required to provide EFH conservation recommendations for any Federal or state agency action that would

adversely affect EFH. The conservation measures proposed for the project by the BLM/FS/CIT and all of the reasonable and prudent measures and the terms and conditions contained in sections 2.2 and 2.3 are applicable to salmon, groundfish and coastal pelagic EFH. Therefore, NOAA Fisheries incorporates each of those measures here as EFH conservation recommendations.

3.8 Statutory Response Requirement

Please note that the Magnuson-Stevens Act (Section 305(b)) and 50 CFR 600.920(j) requires the Federal agency to provide a written response to NOAA Fisheries after receiving EFH conservation recommendations within 30 days of its receipt of this letter. This response must include a description of measures proposed by the agency to avoid, minimize, mitigate or offset the adverse impacts of the activity on EFH. If the response is inconsistent with a conservation recommendation from NOAA Fisheries, the agency must explain its reasons for not following the recommendation.

3.9 Supplemental Consultation

The BLM/FS/CIT must reinitiate EFH consultation with NOAA Fisheries if either action is substantially revised or new information becomes available that affects the basis for NOAA Fisheries' EFH conservation recommendations (50 CFR 600.920).

Table 4. Species with Designated EFH Found in Waters of the State of Oregon.

Ground Fish Species	Blue rockfish (<i>S. mystinus</i>)	Rougheye rockfish (<i>S. aleutianus</i>)	Flathead sole (<i>Hippoglossoides elassodon</i>)
Leopard shark (<i>Triakis semifasciata</i>)	Bocaccio (<i>S. paucispinis</i>)	Sharpchin rockfish (<i>S. zacentrus</i>)	Pacific sanddab (<i>Citharichthys sordidus</i>)
Southern shark (<i>Galeorhinus galeus</i>)	Brown rockfish (<i>S. auriculatus</i>)	Shortbelly rockfish (<i>S. jordani</i>)	Petrale sole (<i>Eopsetta jordani</i>)
Spiny dogfish (<i>Squalus acanthias</i>)	Canary rockfish (<i>S. pinniger</i>)	Shorttraker rockfish (<i>S. borealis</i>)	Rex sole (<i>Glyptocephalus zachirus</i>)
Big skate (<i>Raja binoculata</i>)	Chilipepper (<i>S. goodei</i>)	Silvergray rockfish (<i>S. brevispinus</i>)	Rock sole (<i>Lepidopsetta bilineata</i>)
California skate (<i>R. inornata</i>)	China rockfish (<i>S. nebulosus</i>)	Speckled rockfish (<i>S. ovalis</i>)	Sand sole (<i>Psettichthys melanostictus</i>)
Longnose skate (<i>R. rhina</i>)	Copper rockfish (<i>S. caurinus</i>)	Splitnose rockfish (<i>S. diploproa</i>)	Starry flounder (<i>Platyichthys stellatus</i>)
Ratfish (<i>Hydrolagus coliei</i>)	Darkblotched rockfish (<i>S. crameri</i>)	Stripetail rockfish (<i>S. saxicola</i>)	
Pacific rattail (<i>Coryphaenoides acrolepis</i>)	Grass rockfish (<i>S. rastrelliger</i>)	Tiger rockfish (<i>S. nigrocinctus</i>)	Coastal Pelagic Species
Lingcod (<i>Ophiodon elongatus</i>)	Greenspotted rockfish (<i>S. chlorostictus</i>)	Vermillion rockfish (<i>S. miniatus</i>)	Northern anchovy (<i>Engraulis mordax</i>)
Cabezon (<i>Scorpaenichthys marmoratus</i>)	Greenstriped rockfish (<i>S. elongatus</i>)	Widow Rockfish (<i>S. entomelas</i>)	Pacific sardine (<i>Sardinops sagax</i>)
Kelp greenling (<i>Hexagrammos decagrammus</i>)	Longspine thornyhead (<i>Sebastolobus altivelis</i>)	Yelloweye rockfish (<i>S. ruberrimus</i>)	Pacific mackerel (<i>Scomber japonicus</i>)
Pacific cod (<i>Gadus macrocephalus</i>)	Shortspine thornyhead (<i>Sebastolobus alascanus</i>)	Yellowmouth rockfish (<i>S. reedi</i>)	Jack mackerel (<i>Trachurus symmetricus</i>)
Pacific whiting (Hake) (<i>Merluccius productus</i>)	Pacific Ocean perch (<i>S. alutus</i>)	Yellowtail rockfish (<i>S. flavidus</i>)	Market squid (<i>Loligo opalescens</i>)
Sablefish (<i>Anoplopoma fimbria</i>)	Quillback rockfish (<i>S. maliger</i>)	Arrowtooth flounder (<i>Atheresthes stomias</i>)	
Aurora rockfish (<i>Sebastes aurora</i>)	Redbanded rockfish (<i>S. babcocki</i>)	Butter sole (<i>Isopsetta isolepis</i>)	Salmon
Bank Rockfish (<i>S. rufus</i>)	Redstripe rockfish (<i>S. proriger</i>)	Curlfin sole (<i>Pleuronichthys decurrens</i>)	Coho salmon (<i>O. kisutch</i>)
Black rockfish (<i>S. melanops</i>)	Rosethorn rockfish (<i>S. helvomaculatus</i>)	Dover sole (<i>Microstomus pacificus</i>)	Chinook salmon (<i>O. tshawytscha</i>)
Blackgill rockfish (<i>S. melanostomus</i>)	Rosy rockfish (<i>S. rosaceus</i>)	English sole (<i>Parophrys vetulus</i>)	

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